

EARLY ACTION COMPACT

Shelby County, Tennessee portion of
Memphis Metropolitan Statistical Area

AIR QUALITY IMPROVEMENT PLAN

Prepared by the
Memphis & Shelby County Health Department
Pollution Control Section

March 31, 2004 Milestone

For submittal to the
United States Environmental Protection Agency Region IV
through the Tennessee Department of Environmental and Conservation

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INTRODUCTION

Shelby County, Tennessee entered into a voluntary Early Action Compact (EAC) with the State of Tennessee; Crittenden County, Arkansas and the State of Arkansas; DeSoto County, Mississippi and the State of Mississippi; and the U.S. Environmental Protection Agency in December, 2002 to achieve attainment of the 8-hour ozone standard (promulgated July 17, 1997 and subsequently upheld by the U.S. Supreme Court), as soon as practicable but not later than December 31, 2007. Beginning in 1998, the same parties had entered into a Memorandum of Understanding to conduct the Arkansas-Tennessee-Mississippi Ozone Study (ATMOS) to improve understanding of conditions underlying ozone formation throughout the State of Tennessee and in the Memphis Metropolitan Statistical Area (including DeSoto County, Mississippi and Crittenden County, Arkansas), and to clarify the most effective control measures to further reduce ozone formation. ATMOS builds on the Southern Oxidant Study.

This Air Quality Improvement Plan (AQIP) demonstrates attainment of the 8-hour ozone standard by December 31, 2007 and maintenance of that standard through at least 2012 with emission inventories; a modeling analysis; emission reduction strategies; a component addressing emissions growth from January 1, 2008 through 2012; weight of evidence information; State and Local commitments to specific, quantified, and permanent control measures that, if approved by U.S. EPA will be Federally enforceable as part of the Tennessee State Implementation Plan (SIP), the Transportation Improvement Plan (TIP) or the Long Range Transportation Plan (LRTP); and specific implementation dates for adopted local control measures (other than voluntary measures).

1-Hour Ozone Standard and the Memphis & Shelby County Planning Area

Effective February 16, 1995, the Memphis & Shelby County air quality planning area was redesignated to Attainment status for the 1-Hour Ozone National Ambient Air Quality Standard that measures acute exposure. This National Ambient Air Quality Standard is set at 0.120 parts per million (or 120 parts per billion). A violation of the standard occurs when the fourth highest value at a monitor over a 3-year period exceeds the standard *or* when the second highest ozone value in a single year equals or exceeds 125 parts per billion. The fourth highest high value at any ozone monitor in the planning area is called the “1-hour ozone design value.” Taking rounding into account, a violation occurs when the 3-year “design value” is equal to or greater than 125 parts per billion. Only Shelby County, Tennessee is in this planning area.

8-Hour Ozone Standard

On July 17, 1997 U.S. EPA promulgated an 8-hour average National Ambient Air Quality Standard to measure chronic exposure to ozone. This standard is set at 0.08 parts per million (or 80 parts per billion) averaged over each rolling 8-hour period throughout the ozone season. Ozone season is March 1st through October 31st for Shelby County. A violation of the standard occurs when the three-year average of the fourth highest value at a monitor exceeds the standard. The fourth highest value is called the “8-hour average

ozone design value.” Taking rounding into account, a violation occurs when the 3-year average is equal to or greater than 85 ppb.

For the 3-year period 2000-2002, the 8-hour ozone design value for Memphis & Shelby County is 90 ppb. For the period 2001-2003, the design value is 89 ppb. Based on this data, a Nonattainment designation is expected on April 15, 2004.

8-Hour Ozone Air Quality Expanded Planning Area Boundaries

On March 28, 2000 the U.S. EPA issued a Memorandum entitled “Boundary Guidance on Air Quality Designations for the 8-Hour Ozone National Ambient Air Quality Standards (NAAQS or Standard).” EPA stated therein that the presumptive boundary is the Metropolitan Statistical Area (MSA). When the EAC was executed, the Memphis MSA consisted of the following counties: Fayette, Shelby and Tipton in Tennessee; Crittenden in Arkansas; and DeSoto in Mississippi. Based on the 2000 Census, the Office of Management and Budget expanded the Memphis MSA in 2003 to add the counties of Marshall, Tate and Tunica in Mississippi. Ozone levels continue to drop at all monitors in the Memphis MSA except at the Marion, Arkansas monitor in Crittenden County. The Tennessee Valley Authority and Arkansas Department of Environmental Quality have begun a study to confirm the accuracy of the Marion, Arkansas monitor.

Governors were provided an opportunity to make recommendations on planning area boundaries based on eleven criteria. Governor Ronnie Musgrove of Mississippi submitted a letter on July 14, 2003 recommending that DeSoto County be designated a separate nonattainment area from the rest of the Memphis MSA. EPA Region IV Administrator Jimmy Palmer notified Mississippi in a letter dated December 3, 2003, of its preliminary conclusion that DeSoto County should be included in the Memphis MSA Nonattainment planning area. Mississippi was given until February 6, 2004 to provide additional information to substantiate its recommendation. Desoto County contains three Title V Major Sources of NO_x: Texas Gas Transmission, L.L.C.; Cogentrix (formerly Southaven Power), a baseload power plant that came on-line in 2003 [permitted at 341 TPY NO_x and 38 TPY VOCs]; and Southaven Energy (owned by Duke Power), a peaking power plant that came on-line in 2003 [permitted at 897 TPY NO_x and 49 TPY VOCs]. Both of these power plants have Best Available Control Technology limits: (1) Dry Low NO_x combustion with Selective Catalytic Reduction (2) Dry Low NO_x. Both of these power plants are located on State Line Road one-half mile south of the Shelby County line that is also the Tennessee State Line.

Governor Mike Huckabee of Arkansas “reluctantly” recommended that Crittenden County be included in the Memphis MSA Nonattainment planning area. EPA Region VI Administrator Richard Greene notified Arkansas in a letter dated December 3, 2003, of its preliminary conclusion that Crittenden County would be included in the Memphis MSA. In recent years the Crittenden County ozone monitor in Marion has recorded the highest ozone levels in the Memphis MSA, although 2003 data evidenced downward levels. Neither Arkansas nor Mississippi were subject to the NO_x (Nitrogen Oxides) SIP

(State Implementation Plan) call. They may be subject to the proposed Interstate Transport Rule.

Tennessee Department of Environment and Conservation Commissioner Betsy Child submitted a letter on July 14, 2003 recommending that Fayette and Tipton Counties not be included in the Memphis MSA Nonattainment planning area but that Shelby County be included. Shelby County has approximately forty (40) Title V Major Sources and a coal-fired Tennessee Valley Authority power plant that is subject to the NO_x SIP Call and has installed all required controls. EPA Region IV Administrator Jimmy Palmer notified Tennessee in a letter dated December 3, 2003, of its preliminary conclusion that Fayette, Shelby and Tipton Counties should all be included in the Memphis MSA Nonattainment planning area. Tennessee was given until February 6, 2004 to provide additional information to substantiate its recommendation.

EPA will promulgate the Nonattainment planning area boundaries on April 15, 2004 when it promulgates the Nonattainment designations.

EMISSION INVENTORIES

These inventories are included in the SAI, Inc. component of this AQIP.

MODELING ANALYSIS

Predicted 2007 and 2012 8-hour average ozone concentrations, a screening analysis, and the modeling weight of evidence for the Memphis MSA will be separately submitted by Systems Applications International, Inc. (SAI, Inc.) That submittal demonstrates that by 2007 overall ambient concentrations of ozone in terms of hours of exposure to exceedances would drop by more than 50% throughout the Memphis MSA as a result of the EAC.

EMISSION REDUCTION STRATEGIES

The Federal, State and local emission reduction strategies that have been or will be implemented as soon as practicable but not later than December 31, 2005 have been included in the EAC/Arkansas-Tennessee-Mississippi Ozone Study (ATMOS) Modeling Analysis. Mandatory emission reduction strategies are specific, quantified, permanent and enforceable. Voluntary strategies will be documented and quantified to the extent practicable.

A. TRANSPORTATION MEASURES

Transportation strategies in the TIP and in the LRTP through 2012 have been included in the Modeling Analysis through MOBILE 6, to the extent that they are quantifiable. Annual reports on implementation of Congestion Mitigation and Air Quality Improvement (CMAQ) projects including quantification of resulting emission reductions

will be prepared by the Metropolitan Planning Organization (MPO). Some information is included below regarding expected emission reductions.

- CMAQ Improvement Projects in 2004-2006 TIP Adopted 8/21/03: \$3.4 Million Annual Average Allocation

The following strategies are included in the TIP:

1. Congestion Management in Unincorporated Shelby County, Bartlett, Collierville, Germantown, And Millington \$1.0 Million each year
2. Deploy Traffic Signals Year 3 Throughout City of Memphis \$2.5 Million for 2004 only
3. City of Bartlett Signal Improvements at Sycamore View/Yale Road and at Memphis-Arlington/Bartlett Blvd. \$1.0 Million for 2004 only

VOC Emission Reductions	0.03 Tons Per Day
NOx Emission Reductions	0.01 Tons Per Day
CO Emission Reductions	0.22 Tons Per Day
4. Kimbrough/Dogwood Intersection Improvements in Germantown \$275,000 for 2004 only

VOC Emission Reductions	0.01 Tons Per Day
NOx Emission Reductions	0.01 Tons Per Day
CO Emission Reductions	0.02 Tons Per Day
5. Deploy Traffic Signals Year 4 City of Memphis \$1.0 Million for 2005
\$1.0 Million for 2006
6. Communication Trunk Line For Signalized Intersections And CCTV control \$1.0 Million for 2004
\$1.0 Million for 2005
\$2.5 Million for 2006

The Engineering Study Phase will produce no emission reductions but after construction has been completed:

VOC Emission Reductions	0.06 Tons Per Day
NOx Emission Reductions	0.12 Tons Per Day
CO Emission Reductions	0.36 Tons Per Day

7.	Medical Center Rail Extension	\$1.00 Million for 2004
	[Madison Avenue Trolley Line	\$1.05 Million for 2005
	opened March 15, 2004]	\$1.10 Million for 2006

8.	Memphis Area Rideshare	\$ 900,000 for 2004
	136 vans at 92 organizations	\$ 900,000 for 2005
	More 12-passenger vans to be added	\$ 900,000 for 2006

Vanpool Emission Reductions (155 Vans in service)

VOC Emission Reductions	23.24 Tons Per Year
NOx Emission Reductions	115.35 Tons Per Year
CO Emission Reductions	214.73 Tons Per Year

Fulltime Employee Carpool Emission Reductions (600 carpools)

VOC Emission Reductions	8.44 Tons Per Year
NOx Emission Reductions	5.62 Tons Per Year
CO Emission Reductions	78.37 Tons Per Year

Part-time Employee Carpool Emission Reductions (240 carpools)

VOC Emission Reductions	4.05 Tons Per Year
NOx Emission Reductions	2.70 Tons Per Year
CO Emission Reductions	37.62 Tons Per Year

Combined Tons Per Day Reductions:

VOC Emission Reductions	0.10 Tons Per Day
NOx Emission Reductions	0.06 Tons Per Day
CO Emission Reductions	0.10 Tons Per Day]

9.	MATA Transit Centers	\$ 875,000 for 2004 only
	Suburban areas	(Section 5307 and Section 5309 funds also to be used)

10.	I-40/Covington Pike	\$ 400,000 for 2004
	Interchange Improvement	\$2.66 Million for 2005

11.	4 th I/M Inspection Station	\$3.550 Million for 2004
	to serve 55,000 annexed	\$1.0 Million for 2005
	residents in City of Memphis	

VOC Emission Reductions	0.09 Tons Per Day
NOx Emission Reductions	0
CO Emission Reductions	3.43 Tons Per Day

12.	Farmington/Germantown Road	
	Intersection Improvements	\$ 60,000 for 2004

VOC Emission Reductions	0.02 Tons Per Year
NOx Emission Reductions	0.01 Tons Per Year
CO Emission Reductions	0.03 Tons Per Year

In addition, CMAQ holdover funds will continue to be expended to complete CMAQ projects that have not yet been completed including Deployment of Traffic Signal Systems Year 2 (\$3.4 Million); Restoration of Signal Loop System (\$846,000); Upgrade of Traffic Signals (\$462,805); Design and Build Traffic Signal Systems (\$396,647); and Signal Improvements at specified locations (\$2.1 Million). Traffic Signal projects were delayed during a dispute with Memphis Light Gas & Water over a “per pole fee” that has since been resolved. About 200 signals will be synchronized.

A recently completed CMAQ Project:

13. Purchase of six 40-foot buses that meet new urban bus emission standards to replace buses at end of useful lives

VOC Emission Reductions	0.03 Tons Per Day
NOx Emission Reductions	0.11 Tons Per Day

SAI, Inc. has modeled 0.16 Tons Per Day NOx; 0.06 Tons Per Day VOCs; and 0.66 Tons Per Day CO reductions for all CMAQ projects for the EAC.

- Long Range Transportation Plan (LRTP) 2026

Freeway Incident Management: The State of Tennessee has implemented the Tennessee Help Truck Program along I-240, I-40, I-55, and State Route 385. It clears stalled vehicles and vehicles involved in accidents from travel lanes. Congestion is reduced significantly. The Freeway Management System will enhance this strategy.

Freeway Management System: The Memphis Intelligent Transportation System Regional Architecture adopted by the Memphis MPO allowed the Tennessee Department of Transportation to program \$445.5 Million into the TIP for Early Phase and First Phase implementation. These phases include communication lines, cameras, speed detection, dynamic message signs, highway advisory radio, 511 messaging, and a traffic control center. The State of Mississippi has begun operating video surveillance on I-55 in northern DeSoto County.

High Occupancy Vehicle Lanes have been built on I-40 and I-55 and will be extended, as described in Appendix K of the LRTP. (Selected pages from Appendix K are attached as an **Exhibit**). Two HOV projects have been completed: (1) I-40 between I-240 and Germantown Road and (2) I-55 from I-240 to the Mississippi State Line.

Four new HOV Corridor projects are in the 2004-2006 TIP as under study:

- a. I-240 South, Lamar Avenue to Nonconnah Parkway
- b. I-240 Midtown from I-40 to I-55

- c. I-55 from Mississippi State Line to Goodman Road
- d. I-240 from Walnut Grove to Nonconnah Parkway

Inter-Modal Facilities: An Arena Inter-Modal Transfer Facility is planned near the new FedEx Forum National Basketball Association Grizzlies Stadium. A South Inter-Modal Terminal has been planned for the Whitehaven area in southern Memphis.

Park and Ride Lots: Six (6) such lots have been planned at key interchanges on I-40 and I-55 that have HOV lanes. The two Inter-Modal Facilities will also have Park and Ride Lots.

City of Memphis Bicycling Network: Phase I is scheduled for 2004 to include a 40-mile, five loop, shared roadway that extends west from Downtown Memphis to Kirby Parkway to the east. Every half-mile signs will alert motorists that it is part of the Bicycling Network.

City of Bartlett Bicycle Routes are planned parallel to Fletcher Creek greenbelt and near the Bartlett Wastewater Treatment Plant.

Lakeland Bicycle Routes are planned to connect Canada Road to Seed Tick Road; to extend northward along Scott's Creek to the Loosahatchie River, and to inter-connect along Cobb Road, Monroe Road, and Canada Road. Developers would construct paths as development occurs.

Germantown Bicycle Routes would connect to City of Memphis routes at Wolf River Boulevard, Neshoba Road, and Messick Road.

Wolf River and Nonconnah Creek Greenbelts phased over the next 15 years and involving work by the U.S. Army Corps of Engineers would also add bicycle paths and links.

Tennessee Designated Bicycle Route Highway 64 is an east-west route. The State plans to add more State routes.

B. STATIONARY SOURCE MEASURES

- Nitrogen Oxides (NOx) SIP Call Reductions

The Tennessee Valley Authority (TVA) Allen Steam Plant (coal-fired power plant) is subject to the NOx SIP call. By May 5, 2002 Selective Catalytic Reduction (SCR) had been installed on two of the three Electric Generating Units (EGU) and a reduction of approximately 6,600 Tons of NOx from Acid Rain Allowable permit limits was achieved during the NOx SIP call control season (May 1-September 30). By May 5, 2003 SCR had been installed on the third EGU, achieving additional reductions of about 2,200 Tons of NOx. These controls result in NOx reductions of 57.5 Tons Per Day. Installation and operation was completed one year before the applicable Federal deadline. Note that

neither Arkansas nor Mississippi were subject to the NOx SIP Call. SAI, Inc. computer modeling shows that both Louisiana and Texas contribute to ozone formation in the Memphis MSA, and neither of these states were subject to the NOx SIP Call. The proposed Interstate Transport Rule would not include Texas for ozone purposes.

- New Stationary Source Ozone Action Day NOx Reduction Measure

The TVA Allen Steam Plant has agreed to an additional enforceable permit condition in its Title V Major Source Operating Permit requiring emissions reductions if an ozone exceedance is forecasted for the next day (predicted concentrations of 75 ppb or more) during the months of April and October beginning in 2005. Historically, Shelby County has experienced ozone exceedances in April in only in one year--during the 2003 ozone season. Occasional October ozone exceedances have occurred. The Memphis & Shelby County Pollution Control Section's Meteorologist will advise the assigned permit engineer and the facility during April and October if the next day is a predicted ozone exceedance day. In that event, the TVA Allen Steam Plant will operate its Selective Catalytic Reduction controls on all three EGUs throughout the next day. The 30-day public comment period for the TVA Title V permit will be opened in April.

- New Stationary Source VOC Reduction Measure

Solae, LLC is switching to an alternative fuel by the end of 2004. This is authorized by its Title V Major Source Operating Permit. VOC reductions of 39 TPY or 0.10 Tons Per Day are expected. The Title V permit will be modified to add hourly emission limits.

- Inspection of Stage I Vapor Recovery Equipment

About 550 gasoline stations in Shelby County installed Stage I Vapor Recovery in the mid-1990s. The Pollution Control Section conducted annual inspections 1995-1997 to confirm installation. This equipment has not been inspected since 1997, and it is possible that some gaskets have deteriorated. Each station will be inspected between April, 2004 and April, 2005 to ensure maximum reductions from this strategy. The Section will keep records on any compliance problems identified. It is expected that compliance is high, and inspections will confirm that level of confidence.

- Pending Tennessee Department of Environment and Conservation Nitrogen Oxides Reductions Rule for Uncontrolled Stationary Sources [NOx RACT Rule]

A. Tennessee proposed a rule to require sources with uncontrolled emissions of 50 Tons Per Year or more from the entire facility to install Reasonably Available Control Technology (RACT). The Memphis & Shelby County Health Department (the Department) has identified seven (7) facilities that have uncontrolled 50 TPY NOx emission units.

Facility Name

Tons

1.	Cargill	Unit #1	119
		Unit #2	360
		Unit #3	601
2	Buckeye		66.1
3	Dupont	Unit #1	170
		Unit #2	151
		Unit #3	62.7
		Unit #4	284
4	Premcor		660
5	PCS Nitrogen	Unit #1	627
		Unit #2	183
6	Crompton	Unit #1	109
		Unit #2	105
7	Atofina		114
TOTAL TONS			3611.8
50% NOx Reductions			1805.9 Tons Per Year or <u>4.9 Tons Per Day</u>

A 50% emission reduction from application of NOx RACT on these units is estimated by the Department to result in NOx reductions of 4.9 Tons Per Day. In order to maintain a Certificate of Exemption from State supervision, each local air pollution control program in Tennessee would adopt a standard at least as stringent as this standard. Pending local adoption of the new standard, the Tennessee Air Pollution Control Program would have enforcement authority for this rule.

The Department would present a local NOx RACT Rule for adoption in the City of Memphis in June, 2004 if the State rule has not been adopted by then. Six of the seven facilities are within the City of Memphis. One (PCS Nitrogen) is in the unincorporated portion of Shelby County. [See “Additional Weight of Evidence” below concerning emissions from that facility.]

- B. During the August 19, 2003 public hearing and preceding public comment period, industry requested that the rule apply to individual emission units that emit 25 TPY or more. The Tennessee Air Pollution Control Board has not yet finalized this rule. Twelve (12) *additional* emission units would be subject to NOx RACT at the 25 TPY threshold:

	<u>Facility Name</u>	<u>Tons</u>
1.	Con Agra Grocery Products	28.23
2.	Southern Cotton Oil Company	
	Division of Archer-Daniels-Midland	33.3
3.	Buckeye Technologies, Inc.	42.2
4.	The Premcor Refining Group, LLC	42.8 Unit #1 29.4 Unit #2

		29.2 Unit #3
5.	Protein Technologies International	29.0 Unit #1
		27.1 Unit #2
6.	BFI South Shelby Landfill	28.0
7.	Lucite International	26.7
8.	Federal Express Memphis Air Operations	43.4
9.	BFI Waste Systems of North America	28.0
	TOTAL TONS	387.4 TONS
	50% NOx reductions	193.7 TPY
		<u>0.5 Tons Per Day</u>

If the State Rule or a local rule applicability is finalized at the 25 TPY per emission unit threshold, 5.4 Tons Per Day NOx Reductions would result.

- Ozone Action Day Forecasting and Burning Ban

A new permit condition has been added to each permit issued for an air curtain destructor to be used for land clearing within Shelby County beginning in Ozone Season 2003. The requirement is that the permittee contact the Department's Computerized Local Air Index Reporting (CLAIR) system recorded line at (901) 544-7489 or 544-7490 before igniting a fire to determine if it is a Burning Day or a No Burning Day. Department staff visit each permittee site on No Burning Days to verify that burning is not occurring or to instruct the permittee to extinguish any such burning. The Department's Meteorologist performs the forecasting and adds the Burning Day/No Burning Day information to the forecasts that are distributed to the media and the AirNow map on the Worldwide Web. Estimated emission reductions of 0.3 Tons Per Day NOx; 7.17 Tons Per Day VOCs; and 13.14 Tons Per Day CO would result from this measure.

Permittee compliance has been good throughout the ozone season. This requirement was tested in particular during the burning of debris generated by a July 22, 2003 "land hurricane" of fifteen minutes' duration. Twelve special storm debris burning locations were sited and operated during the months of August, September and October 2003. None of these sites were allowed to burn on those days for which ozone problems were forecasted.

- Pending Tennessee Anti-Idling and Smoking Vehicle Regulatory Proposal

The Tennessee Air Pollution Control Board has opened a public comment period on proposed new Chapter 1200-3-37 Mobile Source Prohibitions. This rule would prohibit operation for more than a period of 5 consecutive seconds of a gasoline-powered mobile source that emits visible smoke from its exhaust pipe. It would prohibit operation for more than a period of 10 consecutive seconds of a diesel-powered mobile source that emits visible smoke from its exhaust pipe. Some exemptions are listed. In order to maintain a Certificate of Exemption from State supervision, each local air pollution control program in Tennessee would adopt a standard at least as stringent as this

standard. Pending local adoption of the new standard, the Tennessee Air Pollution Control Program would have enforcement authority for this rule. The following emissions reductions resulting from diesel engines are estimated: 0.07 Tons Per Day NOx; 0.01 Tons Per Day VOCs; and 0.07 Tons Per Day CO.

- Pending Tennessee Anti-Tampering Regulatory Proposal

The Tennessee Air Pollution Control Board has opened a public comment period on proposed new Chapter 1200-3-36 Motor Vehicle Tampering. Tampering with the emissions control system on a motor vehicle would be prohibited even for vehicles not subject to an Inspection and Maintenance program. In order to maintain a Certificate of Exemption from State supervision, each local air pollution control program in Tennessee would adopt a standard at least as stringent as this standard. Pending local adoption of the new standard, the State Air Pollution Control Program would have enforcement authority for this rule.

- Truck Speed Limit of 55 MPH During Ozone Season

According to the Insurance Institute for Highway Safety website, ten (10) states have differential speed limits for cars and trucks. Of these ten states, five (5) limit truck speed limits to 55 MPH on Rural Interstates [California, Illinois, and Michigan since 1996; Ohio and Oregon since 1987]. Three (3) of the ten states have limited truck speed limits to 55 MPH on Urban Interstates since 1996 [California, Michigan, and Ohio].

The Shelby County Commission adopted a Resolution on March 22, 2004 in support of a posted and enforced 55 MPH speed limit for trucks during ozone season in all Early Action Compact areas in Tennessee. This was the speed limit for all vehicles on the Interstates in Shelby County until about one year ago, when the Tennessee Department of Transportation raised the speed limit for all vehicles to 65 MPH on some segments of the Interstate, without consulting the Memphis Metropolitan Planning Organization.

Restoring the 55 MPH speed limit would add 4 minutes and 9 seconds travel time on the I-40/240 North Loop from the eastern Shelby County boundary to the Mississippi River, and it would add 6 minutes 6 seconds travel time on the I-40/240 South Loop/I-55 to the Mississippi State Line. A copy of the unsigned Resolution is attached as an **Exhibit**. A copy of the signed resolution will be forwarded when it is available. The signed Resolution will also be forwarded to the Commissioner of the Tennessee Department of Environment and Conservation and to the Commissioner of the Tennessee Department of Transportation. Expected NOx emission reductions in Shelby County are 5.9 Tons Per Day.

The Tennessee Air Pollution Control Board at its March 10th meeting expressed its intent to request that the Commissioner of the Tennessee Department of Environment and Conservation convene a special meeting of the Interagency Task Force—the Tennessee Department of Transportation is also a member—to focus on the truck speed limit issue and achieve a change in the Early Action Compact areas because this is the single most

effective strategy to reduce NOx emissions. It addresses emissions from trucks that are not garaged/registered in Shelby County that would not be subject to an Inspection and Maintenance program but that emit significant amount of air pollutants into the ambient air that is measured at Shelby County air monitors.

Tennessee Code Annotated §55-8-152(c) defines “truck” as used in the speed limit provisions as “any motor vehicle of one and one half (1 ½) ton rated capacity or more.” Section 55-8-152(b) makes it illegal for a truck to drive in excess of 50 MPH “upon the highways of this state” except as provided in § 55-8-152(d). The exception in (d) authorizes trucks to travel up to 65 MPH on an Interstate and on 4-lane controlled access federal or state routes. Tennessee Code Annotated § 55-8-152(g)(1)(a) authorizes TDOT to lower speed limits “as it deems appropriate to concerns regarding the roadway, traffic, or other conditions.” This authority is in addition to Tennessee Code Annotated § 55-8-153, which authorizes the Tennessee Department of Transportation to lower the speed limits in business, urban or residential districts, congested areas, dangerous intersections “or whenever and wherever the department shall determine, upon the basis of an engineering and traffic investigation that the public safety requires a lower speed limit.” No rulemaking procedures are required under Tennessee laws to change speed limits.

- Pending Revisions to Tennessee Light-Duty Motor Vehicle Inspection and Maintenance Rule

Chapter 1200-3-29 would be amended to define Category I and Category II Counties. The Tennessee Air Pollution Control Board would classify counties and two sets of I/M requirements would apply. The Board is considering I/M with Onboard Diagnostics and gas cap tests.

- Pending Tennessee General Assembly House Bill 3498/Senate Bill 3410

This legislation would amend Inspection and Maintenance provisions found in Tennessee Code Annotated § 55-4-100 *et seq.* It would authorize the Tennessee Air Pollution Control Board to designate areas that need I/M to attain or maintain the National Ambient Air Quality Standards, or a County Commission could pass a resolution establishing I/M for the County. It would also add a statutory Anti-Tampering provision.

Each of the emission reduction measures embodied in an ordinance/rulemaking would become SIP Revisions for the Shelby County component of the Tennessee SIP.

C. VOLUNTARY MEASURES

- Shelby County Smart Growth Initiative

Phase I includes 12 steps that range from updating land development regulations unchanged since 1986 to allow for more innovative building and development techniques to collection of an adequate facilities tax.. Shelby County adopted a residential corridor ordinance and is in the process of designating residential corridors. Memphis and Shelby

County have provided and will continue to provide incentives for re-use and restoration of commercial structures downtown and throughout the County in an effort to concentrate employment centers and facilitate transit. A copy of this Initiative is attached as an **Exhibit**.

- Low Emission Vehicle and Related Clean Fuels Measures

The Department is working with Shelby County Government and City of Memphis Government to create a preference for vehicle purchases of LEVs and SULEVs such as the Toyota Prius as Shelby County Fleet vehicles reach the end of their useful lives.

D. Implementation Timeframe

All strategies will be implemented by May 1, 2005 if feasible and not later than December 31, 2005 at the very latest.

**EMISSIONS REDUCTIONS FROM JANUARY 1, 2008
THROUGH 2012**

- Airport Light Rail Line

The 9-mile Airport Line of the Memphis Area Transportation Authority's light rail system is scheduled to open in 2010. It will connect the Memphis International Airport to the major employment centers in the Medical District and Downtown. It will also facilitate tourist access to lodging and attractions Downtown including the FedEx Forum stadium for the Grizzlies National Basketball Association games, the Pyramid, the Autozone Baseball Park, Beale Street, and Tom Lee Park along the Mississippi River that is the site of the 4-weekend Memphis in May Festival and other events. MATA proposes using 50% federal funds, 25% City of Memphis funds, and 25% State of Tennessee funds. The Draft Environmental Impact Statement is currently under review by the Federal Transit Administration. Main Street Rail Trolley has operated since 1993, and Riverfront Loop Rail Extension has operated since 1997. This is included in the Long Range Transportation Plan.

- Enforceable Local Permit Condition and Pending Cargill, Inc. Global VOC/NOx Enforcement Settlement

An enforceable permit condition to achieve reductions in Volatile Organic Compound (VOC) emissions is being added in 2004 as a "significant modification" to the Title V Major Source Operating Permit issued to Cargill, Inc. by the Memphis & Shelby County Pollution Control Section. This permit condition will require by May 1, 2007 and continuing thereafter specific, quantified and permanent VOC reductions in the amount of approximately 89 Tons Per Year or 0.24 Tons Per Day. This agreement has been reached in advance of Federal global settlement negotiations concerning all nine Cargill plants that are the subject of enforcement action by U.S. EPA in order to facilitate the

Early Action Compact process. It is anticipated that as a result of Federal negotiations, one or more new VOC test methods will be promulgated to address the corn milling processes at issue. Cargill and EPA's Office of Air Quality Procedures and Testing are currently working to determine the accuracy and reliability of various approaches. Testing pursuant to new methods may demonstrate that greater emissions reductions have, in fact, been achieved at the Memphis Cargill, Inc. plant. Reductions of Nitrogen Oxides (NOx) are also expected to result from the global settlement reductions.

ADDITIONAL WEIGHT OF EVIDENCE

Source Shutdown and Resulting Inflated Emissions Inventory: Effective June 4, 2003, PCS Nitrogen, Inc. shut down its operations, pending a reduction in natural gas prices. PCS Nitrogen, Inc. hopes to restart by June of 2005 to retain "existing source" status, but natural gas prices have not dropped to levels at which the plant could profitably operate and are not expected to drop to such levels for the foreseeable future. This plant makes fertilizers and competes with South American suppliers. Included in the 2002 Emissions Inventory used by SAI, Inc. for prediction of 8-Hour Average Ozone concentrations in 2007 and 2012 are 813.76 Tons Per Year [2.23 Tons Per Day] of NOx; 374.82 Tons Per Year [1.03 Tons Per Day] of Carbon Monoxide; and 61.79 Tons Per Year [0.017 Tons Per Day] of VOCs for PCS Nitrogen, Inc. that very likely will not be emitted in the 2004-2007 timeframe.

Memphis International Airport Emission Reductions

- a. Electrification at Gates: Since the mid-1980s, a 400 hertz electrical system at the gates has provided power for heating, cooling and other electrical needs of planes while they are parked at the gate. Related emissions reductions are not quantified in the computer modeling for the Memphis MSA.
- b. FedEx Conveyor System at Gates: Tugs are no longer used by FedEx since installation of a conveyor system. Related emissions reductions are not quantified in the computer modeling for the Memphis MSA.
- c. Hybrid Fueling: Instead of using fuel tenders (large trucks), lower emitting hybrids are used to fuel planes at this airport. Related emissions reductions are not quantified in the computer modeling for the Memphis MSA.
- d. New Underground Fuel Pipeline for FedEx: FedEx has paid for construction of this pipeline from Arkansas under the Mississippi River to the Memphis International Airport. It is eliminating truck deliveries of aviation fuel to FedEx and associated evaporative emissions. It will also double the capacity and throughput of aviation fuel to FedEx.

- e. Automated Vehicle Identification System (AVI): The Airport Authority spent \$1 million to construct this system in 2003. It is designed to measure “dwell time” (idling time) at the curb by shuttles and taxis. After the shakedown period, a baseline will be developed. Thereafter, financial incentives will be offered for *reduced* idling time. A recordkeeping system will enable quantification of emission reductions at that point, but related emissions reductions are not quantified in the computer modeling for the Memphis MSA yet.
- f. Planned Consolidated Ground Transport Facility: A parcel of land already owned by the Airport Authority has been dedicated for this use. The project is on hold due to depressed passenger use of the airport after the September 11, 2001 terrorism incidents involving airplanes. Construction of the facility is estimated at \$50 million. All rental car agencies would be relocated to this parcel. Rental car agencies would contract with the Airport Authority and pay a fee. The project is designed to eliminate 80% of the shuttles from rental car agencies. Quantification should be available if this facility is constructed between 2005-2007.

Memphis Light Gas & Water Energy Efficiency Initiatives:

EcoBuild: This is a voluntary 5-year program for energy efficient construction techniques similar to the International Building Code for new residential buildings to be constructed 2003-2007. Builders have signed up with MLG&W to participate and projected emission reductions by 2007 are:

10.2 TPY NO_x
4,117.0 TPY CO₂
23.0 TPY SO_x

COMBINED EXPECTED VOC AND NOX EMISSION REDUCTIONS PER DAY

SAI, Inc. has modeled 0.16 Tons Per Day NO_x; 0.06 Tons Per Day VOCs; and 0.66 tons Per Day CO reductions. Upon completion of all of the listed CMAQ projects, 0.32 Tons Per Day NO_x ; 0.34 Tons Per Day VOCs; and 4.16 tons Per Day CO reductions are expected—at a minimum. Only partial quantification is currently available for some of the projects. An additional 5.9 Tons Per Day would result from the 55 MPH truck speed limit.

In addition, using the 2002 Emission Inventory as the starting point, the following reductions are expected from stationary sources: 65.9 Tons Per Day NO_x (including NO_x SIP Call reductions); 8.07 Tons Per Day VOCs; and 14.24 Tons Per Day CO.

The grand total emissions reductions since 2002, then would be:

71.22 Tons Per Day NO_x
8.41 Tons Per Day VOCs
18.40 Tons Per Day CO.

These totals do not include the TVA Ozone Action Day emission reductions.